3,480,498 (Paul). Claim 24 was also rejected as being obvious over the references applied to Claims 21, 22, 23 and 25 in further view of United States Letters Patent No. 3,646,651 (McGaughey et al.) or United States Letters Patent No. 2,614,058 (Francis).

The claims in issue of the subject invention call for a method for producing a covered roll having a compressive under-layer between the roll and an outer layer. The under-layer serves to securely hold the outer layer on the roll and to provide stress reduction. To that end the under-layer of the subject invention is formed of densely packed fibers and is infused with a low viscosity thermoset resin that is by applied with vacuum so that it the resin fills the small interstitial spaces between the fibers and intimately binds with the fibers. The use of a low viscosity resin and vacuum application, ensures that this intimate binding occurs.

In contradistinction the under-layer of the '920 Passonen et al. patent is a multi-layer fabric having a top layer 52, a bottom layer 53 and an intermediate layer 51 interwoven therebetween (see Col. 5, line 66 to Col. 6, line 13). This intermediate layer 51 is quite open and has to be such to enable the resin to be introduced therein, since the resin is of relatively high viscosity and is infused by positive pressure, not by vacuum. This construction results in several disadvantages which were discussed in detail on page 3 of the Specification of the subject application as follows:

> While the compressive layer disclosed in the Paasonen patents may provide some degree of residual stress reduction, there are certain drawbacks to the construction of the compressive layer . . . that could be surmounted to increase the overall strength of the resulting covered roll and increase the adhesion between the covering and the metal roll core. First, while the void space or gap of the compressive layer may make possible the injection of certain highly viscous thermoset resins therein where those resins are injected by positive pressure, the large portion of the injected thermoset material will actually bind to the spacer fabric.

The larger unbound portion of the thermoset resin will form a weak brittle mass that will do little to add to the overall strength of the resulting covered roll and will do little to serve to increase the adhesion between the metal roll core and the covering roll.

Claim 21 has been amended to call for the above discussed distinguishing features. To that end, as amended Claim 21 now specifies the steps of: (1) providing a roll core base having two ends, a length therebetween and an outer surface, (2) providing a dry under-layer formed of densely packed fibers, (3) tightly wrapping the under-layer circumferentially around the roll core base, (4) applying a covering layer over the dry under-layer, and (5) infusing a low-viscosity thermoset resin with vacuum into the dry under-layer to cause said resin to intimately bind with the densely packed fibers of said under-layer.

These combined features are not shown nor suggested in the Paasonen et al. patent, nor in any of the other references relied upon by the PTO.

Claims 22 - 25 depend either directly or indirectly upon Claim 21 and are hence patentable for reasons similar thereto. Claim 24 had also been rejected under 35 U.S.C. § 112 as failing to have antecedent basis for sub-steps b - f in the claim. To that end, Claim 25 has been amended to make it dependent upon Claim 22 instead of Claim 21. Claim 22 includes all of the sub-steps b - f referred to in Claim 25. Hence it is respectfully submitted that Claim 25 now meets the mandates of 35 U.S.C. § 112.

New Claim 27 has been added to call for an additional aspect of this invention, namely, the method of making one exemplary multi-layered embodiment of the under-layer. Since Claim 27 is dependent upon Claim 21, it is respectfully submitted as being patentable for the same reasons as given with respect to Claim 21. In addition the features of the under-layer as called for in Claim 27 is not shown nor suggested in the art of record.

Accordingly, in view of the foregoing amendments and remarks it is respectfully submitted that Claims 21 - 25 and 27 are allowable and such favorable action is respectfully requested.

In the event that the foregoing amendment does not result in the allowance of this application and there is(are) any issues which need to be resolved, the undersigned respectfully requests that Examiner Aftergut give the undersigned a telephone call to try and resolve any such outstanding issue(s).

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
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April 2, 2003

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CERTIFICATE OF MAILING

I hereby certify that the foregoing AMENDMENT, Transmittal Letter and PETITION FOR EXTENSION OF TIME, in duplicate, re Application Serial No. 09/723,697 are being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, this 2nd day of April, 2003.

_____
Barry A. Stein

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please rewrite Claim 21 as follows:

21. (Amended) A method for producing a covered roll, the covered roll having a multi-layered construction, said method comprising the steps of:

a. providing a roll core base, said roll core base having two ends, a length therebetween and an outer surface;

b. providing a dry under-layer formed of densely packed fibers;

c. tightly wrapping [a dry] said under-layer [formed of densely packed fibers] circumferentially around said roll core base;

[c.] d. applying a covering layer over the dry under-layer; and,

[d.] e. infusing a low-viscosity thermoset resin with vacuum into [the] said dry under-layer to cause said resin to intimately bind with said densely packed fibers of said under-layer.

Please rewrite Claim 25 as follows:

25. (Amended) A method as in Claim [21] 22 wherein said sub-steps b through f are carried out while the covered roll is oriented substantially horizontally.

Please add the following new claims:

27. A method as in Claim 21 wherein said roll core base has a longitudinal axis, wherein said under-layer comprises at least three sub-layers, with each of said sub-layers being formed of densely packed long continuous fibers, and wherein said dry under-layer is provided so that the fibers of one of said at least three sub-layers extend parallel to said longitudinal axis, the fibers of another of said at least three sub-layers extend perpendicularly to said longitudinal axis, and the fibers of still another of said at least three sub-layers extend randomly.